

Amendments to the Claims:

1. (Currently Amended) A method of operating a transceiver transmitting device including one or more a plurality of transmitter antennas, at least one receiver antenna, and that can communicate using one or more a plurality of propagation channels between the one or more plurality of transmitter antennas and the one or more a plurality of receiver antennas of a receiving device, said method comprising:

receiving a binary stream assembled into groups of bits forming symbol indices;

and

generating at least one complex symbol value in response to a reception of the binary stream, each complex symbol value of the at least one complex symbol value being normalized over one or more channel coefficients associated with the one or more propagation channels; and

transmitting the at least one complex symbol value from the plurality of transmitter antennas.

2. (Currently Amended) A method of operating a transmitting device including a plurality of transmitter antennas, that can communicate using one or more propagation channels between the plurality of transmitter antennas and a plurality of receiver antennas of a receiving device, the method comprising:

receiving a binary stream assembled into groups of bits forming symbol indices;

and

generating at least one complex symbol value in response to a reception of the binary stream, each complex symbol value of the at least one complex symbol value being normalized over one or more channel coefficients associated with the one or more propagation channels ~~The method of claim 1,~~ wherein the at least one complex symbol value is generated according to:

$$x_m = \frac{\sqrt{E_s}(h_{i,m}^*)}{\sum_{j=0}^{M_T-1} |h_{i,j}|^2} s_j \quad m = 0, 1, \dots, M_T - 1$$

where  $x_m$  is the at least one complex symbol value.

where  $i$  is an index of a selected receiver antenna to receive the at least one complex symbol value,

where  $m$  is an index of a selected transmitter antenna to transmit the at least one complex symbol value,

where  $\sqrt{E_s}$  is a value proportional to a voltage that is normalized by the formula,

where  $h_{x,y}$  is a measured complex channel coefficient of the propagation channel between receiver antenna  $x$  and transmitter antenna  $y$ ,

where  $h^*$  is a complex conjugate of  $h$ , and

where  $M_T$  is a quantity of the plurality of transmitter antennas.

3. (Currently Amended) A method of operating a transmitting device including a plurality of transmitter antennas, that can communicate using a plurality of propagation channels between the plurality of transmitter antennas and a plurality of receiver antennas of a receiving device, the method comprising:

receiving a binary stream assembled into groups of bits forming symbol indices;  
and

generating at least one complex symbol value in response to a reception of the binary stream, each complex symbol value of the at least one complex symbol value being normalized over one or more channel coefficients associated with the plurality of propagation channels ~~The method of claim 4, wherein the at least one complex symbol value is generated according to:~~

$$X_j[k] = \frac{\sqrt{E_s}(H_{i,j}^*[k])}{\sum_{m=0}^{M_T-1} |H_{i,m}[k]|^2} s_j[k] \quad k = 0, 1, \dots, N-1; j = 0, 1, \dots, M_T-1$$

where  $X_j[k]$  is the at least one complex symbol value,

where  $i$  is an index of a selected receiver antenna to receive the at least one complex symbol value,

where  $m$  is an index of a selected transmitter antenna to transmit the at least one complex symbol value,

where  $k$  is an index of OFDM sub-channels connecting a  $j$ -th transmitter antenna to an  $i$ -th receiver antenna,

where  $\sqrt{E_s}$  is a value proportional to a voltage that is normalized by the formula,

where  $H_{x,y}[k]$  is a measured complex channel coefficient of the propagation channel between receiver antenna  $x$  and transmitter antenna  $y$ ,

where  $H^*$  is the complex conjugate of  $H$ ,

where  $N$  is the quantity of OFDM channels, and

where  $M_T$  is the quantity of the plurality of transmitter antennas.

4. (Currently Amended) The method of claim 1, further comprising:

selecting a first receiver antenna of the ~~one or more~~ plurality of receiver antennas as a function of a metric proportional to an average injection power corresponding to the first receiver antenna; and

~~transmitting the at least one complex symbol value from the one or more transmitter antennas to the first receiver antenna.~~

5. (Currently Amended) The method of claim 1, further comprising:

selecting a first receiver antenna of the ~~one or more~~ plurality of receiver antennas as a function of a vector norm corresponding to the first receiver antenna; and

~~transmitting the at least one complex symbol value from the one or more transmitter antennas to the first receiver antenna.~~

6. (Currently Amended) A ~~transceiver~~transmitting device, comprising:  
~~one or more~~ a plurality of transmitter antennas;~~one or more receiver antennas;~~  
wherein the transmitting device can communicate using one or more propagation channels  
between said ~~one or more~~ plurality of transmitter antennas and said ~~one or more~~ a plurality of  
receiver antennas of a receiving device; and  
a transmitter operable to generate at least one complex symbol value in  
response to a reception of a binary stream assembled into groups of bits forming symbol  
indices, each complex symbol value of the at least one complex symbol value being normalized  
over one or more channel coefficients associated with said ~~one or more~~ plurality of propagation  
channels.

7. (Currently Amended) A transmitting device, comprising:  
a plurality of transmitter antennas, wherein the transmitting device can  
communicate using one or more propagation channels between the plurality of transmitter  
antennas and a plurality of receiver antenna of a receiving device; and  
a transmitter operable to generate at least one complex symbol value in  
response to a reception of a binary stream assembled into groups of bits forming symbol  
indices, each complex symbol value of the at least one complex symbol value being normalized  
over one or more channel coefficients associated with the one or more propagation channels  
The transceiver of claim 6, wherein said transmitter generates the at least one complex symbol  
value according to:

$$x_m = \frac{\sqrt{E_s} (h_{i,m}^*)}{\sum_{j=0}^{M_T-1} |h_{i,j}|^2} s_j \quad m = 0, 1, \dots, M_T - 1$$

where  $x_m$  is the at least one complex symbol value,  
where  $i$  is an index of a selected receiver antenna to receive the at least one complex  
symbol value,  
where  $m$  is an index of a selected transmitter antenna to transmit the at least one  
complex symbol value,  
where  $\sqrt{E_s}$  is a value proportional to a voltage that is normalized by the formula,  
where  $h_{x,y}$  is a measured complex channel coefficient of the propagation channel  
between receiver antenna  $x$  and transmitter antenna  $y$ ,

where  $h^*$  is a complex conjugate of  $h$ , and  
where  $M_T$  is a quantity of the plurality of transmitter antennas.

8. (Currently Amended) A transmitting device, comprising:  
a plurality of transmitter antennas, wherein the transmitting device can  
communicate using one or more propagation channels between the plurality of transmitter  
antennas and a plurality of receiver antennas of a receiving device; and  
a transmitter operable to generate at least one complex symbol value in  
response to a reception of a binary stream assembled into groups of bits forming symbol  
indices, each complex symbol value of the at least one complex symbol value being normalized  
over one or more channel coefficients associated with the one or more propagation channels  
 The transceiver of claim 6, wherein said transmitter generates the at least one complex symbol  
 value according to:

$$X_j[k] = \frac{\sqrt{E_s}(H_{i,j}^*[k])}{\sum_{m=0}^{M_T-1} |H_{i,m}[k]|^2} s_r[k] \quad k = 0, 1, \dots, N-1; j = 0, 1, \dots, M_T-1$$

where  $X_j[k]$  is the at least one complex symbol value,  
where  $i$  is an index of a selected receiver antenna to receive the at least one complex  
symbol value,  
where  $m$  is an index of a selected transmitter antenna to transmit the at least one  
complex symbol value,  
where  $k$  is an index of OFDM sub-channels connecting a  $j$ -th transmitter antenna to an  
 $i$ -th receiver antenna,  
where  $\sqrt{E_s}$  is a value proportional to a voltage that is normalized by the formula,  
where  $H_{x,y}[k]$  is a measured complex channel coefficient of the propagation channel  
between receiver antenna  $x$  and transmitter antenna  $y$ ,  
where  $H^*$  is the complex conjugate of  $H$ ,  
where  $N$  is the quantity of OFDM channels, and  
where  $M_T$  is the quantity of the plurality of transmitter antennas.

9. (Currently Amended) The ~~transceiver~~transmitting device of claim 6, wherein:  
said transmitter is further operable to select a first receiver antenna of said ~~one or more~~ plurality of receiver antennas as a function of a metric proportional to an average injection power of corresponding to said first receiver antenna; and  
said ~~one or more~~ plurality of transmitting antennas are operable to transmit the at least one complex symbol value to said first receiver antenna.

10. (Currently Amended) The ~~transceiver~~transmitting device of claim 6, further comprising:  
a receiver operable to select a first receiver antenna of said ~~one or more~~ plurality of receiver antennas as a function of a metric proportional to an average injection power corresponding to said first receiver antenna,  
wherein said ~~one or more~~ plurality of transmitting antennas are operable to transmit the at least one complex symbol value to said first receiver antenna.

11. (Currently Amended) The ~~transceiver~~transmitting device of claim 6, wherein:  
said transmitter is further operable to select a first receiver antenna of said ~~one or more~~ plurality of receiver antennas as a function of a vector norm corresponding to said first receiver antenna; and  
said ~~one or more~~ plurality of transmitter antennas are operable to transmit the at least one complex symbol value to said first receiver antenna.

12. (Currently Amended) The ~~transceiver~~transmitting device of claim 6, further comprising:  
a receiver operable to select a first receiver antenna of said ~~one or more~~ plurality of receiver antennas as a function of a vector norm corresponding to said first receiver antenna,  
wherein said ~~one or more~~ plurality of transmitting antennas are operable to transmit the at least one complex symbol value to said first receiver antenna.

13. (Currently Amended) A method of operating a ~~transceiver~~transmitting device including ~~one or more~~ a plurality of transmitter antennas, ~~one or more receiver antennas,~~  
wherein the transmitting device can communicate using and one or more propagation channels

between the plurality of transmitter antennas and the one or more a plurality of receiver antennas of a receiving device, said method comprising:

computing a metric proportional to an average injection power for each receiver antenna of the one or more plurality of receiver antennas of the receiving device, wherein the metric is based on measured, complex channel coefficients associated with the one or more propagation channels;

selecting a first antenna of the one or more plurality of receiver antennas of the receiving device having a smallest average injection power to receive at least one complex value symbol from the plurality of transmitter antennas.

14. (Currently Amended) A method of operating a transmitting device including a plurality of transmitter antennas, wherein the transmitting device can communicate using one or more propagation channels between the plurality of transmitter antennas and a plurality of receiver antennas of a receiving device, the method comprising:

computing a metric proportional to an average injection power for each receiver antenna of the plurality of receiver antennas of the receiving device;

selecting a first antenna of the plurality of receiver antennas of the receiving device having a smallest average injection power to receive at least one complex value symbol from the plurality of transmitter antennas ~~The method of claim 13~~, wherein all computations of the metric proportional to the average injection power are according to:

$$AIP_i = \frac{1}{\sum_{j=0}^{M_T-1} |h_{i,j}|^2}$$

where  $AIP_i$  is the average injection power,

where  $i$  is an index of a selected receiver antenna,

where  $j$  is an index of a selected transmitter antenna to transmit the at least one complex symbol value,

where  $h_{x,y}$  is a measured complex channel coefficient of the propagation channel between receiver antenna  $x$  and transmitter antenna  $y$ ,

and where  $M_T$  is a quantity of the plurality of transmitter antennas.



15. (Currently Amended) A method of operating a transmitting device including a plurality of transmitter antennas, wherein the transmitting device can communicate using one or more propagation channels between the plurality of transmitter antennas and a plurality of receiver antennas of a receiving device, the method comprising:

computing a metric proportional to an average injection power for each receiver antenna of the plurality of receiver antennas of the receiving device;

selecting a first antenna of the plurality of receiver antennas of the receiving device having a smallest average injection power to receive at least one complex value symbol from the plurality of transmitter antennas ~~The method of claim 13~~, wherein all computations of the metric proportional to the average injection power are according to:

$$AIP_i = \sum_{k=0}^{N-1} \left( \frac{1}{\sum_{j=0}^{M_T-1} |H_{i,j}[k]|^2} \right)$$

where  $AIP_i$  is the average injection power,

where  $i$  is an index of a selected receiver antenna to receive the at least one complex symbol value,

where  $j$  is an index of a selected transmitter antenna to transmit the at least one complex symbol value,

where  $k$  is an index of OFDM sub-channels connecting a  $j$ -th transmitter antenna to an  $i$ -th receiver antenna,

where  $H_{x,y}[k]$  is a measured complex channel coefficient of the propagation channel between receiver antenna  $x$  and transmitter antenna  $y$ ,

where  $N$  is the quantity of the OFDM sub-channels, and

where  $M_T$  is the quantity of the plurality of transmitter antennas.

16. (Currently Amended) A method of operating a transceivertransmitting device including ~~one or more~~ a plurality of transmitter antennas, ~~one or more~~ receiver antennas, wherein the transmitting device can communicate using and one or more propagation channels

between the plurality of transmitter antennas and the one or more a plurality of receiver antennas of a receiving device, said method comprising:

computing a vector norm for each receiver antenna of the ~~one or more~~ plurality of receiver antennas of the receiving device based on measured, complex channel coefficients associated with the one or more propagation channels;

selecting a first antenna of the ~~one or more~~ plurality of receiver antennas of the receiving device having a largest vector norm to receive at least one complex value symbol from the plurality of transmitter antennas.

17. (Currently Amended) The method of claim 16, wherein all computations of the vector norm are according to:

$$VN_i = \sum_{j=0}^{M_T-1} |h_{i,j}|^2 = \|\mathbf{h}_i\|_2^2$$

where  $VN_i$  is the vector normal of one of the plurality of receiver antennas,

where  $i$  is an index of a selected receiver antenna to receive the at least one complex symbol value,

where  $j$  is an index of a selected transmitter antenna to transmit the at least one complex symbol value,

where  $h_{i,j}$  is a measured complex channel coefficient of the propagation channel between receiver antenna  $x$  and transmitter antenna  $y$ , and

where  $M_T$  is the quantity of the plurality of transmitter antennas.

18. (Currently Amended) A method of operating a transmitting device including a plurality of transmitter antennas, wherein the transmitting device can communicate using one or more propagation channels between the plurality of transmitter antennas and a plurality of receiver antennas of a receiving device, the method comprising:

computing a vector norm for each receiver antenna of the plurality of receiver antennas of the receiving device;

selecting a first antenna of the plurality of receiver antennas of the receiving device having a largest vector norm to receive at least one complex value symbol from the

plurality of transmitter antennas ~~The method of claim 16~~, wherein all computations of the vector norm are according to:

$$VN_i = \sum_{k=0}^{N-1} \left( \sum_{j=0}^{M_T-1} |H_{i,j}[k]|^2 \right) = \sum_{k=0}^{N-1} \|\mathbf{H}_i[k]\|_2^2$$

where  $VN_i$  is the vector norm of one of the plurality of receiving antennas.

where  $i$  is an index of a selected receiver antenna to receive the at least one complex symbol value.

where  $j$  is an index of a selected transmitter antenna to transmit the at least one complex symbol value.

where  $k$  is an index of OFDM sub-channels connecting a  $j$ -th transmitter antenna to an  $i$ -th receiver antenna.

where  $H_{x,y}[k]$  is a measured complex channel coefficient of the propagation channel between receiver antenna  $x$  and transmitter antenna  $y$ .

where  $N$  is the quantity of the OFDM sub-channels, and

where  $M_T$  is the quantity of the plurality of transmitter antennas.

19. (Currently Amended) A ~~transceiver~~transmitting device, comprising:  
one or more a plurality of transmitter antennas; one or more receiver antennas;  
wherein the transmitting device can communicate using one or more propagation channels  
between said one or more plurality of transmitter antennas and said a plurality of one or more  
receiver antennas of a receiving device; and

a module operable to compute a metric proportional to an average injection  
power for each receiver antenna of said one or more plurality of receiver antennas of the  
receiving device, wherein the metric is based on measured, complex channel coefficients  
associated with the one or more propagation channels, and wherein said module is further  
operable to select a first antenna of said one or more plurality of receiver antennas of the  
receiving device having a smallest average injection power to receive at least one complex  
value symbol from said one or more plurality of transmitter antennas.

20. (Currently Amended) A transmitting device, comprising:  
a plurality of transmitter antennas, wherein the transmitting device can  
communicate using one or more propagation channels between the plurality of transmitter  
antennas and a plurality of receiver antennas of a receiving device; and  
a module operable to compute a metric proportional to an average injection  
power for each receiver antenna of the plurality of receiver antennas of the receiving device, the  
module further operable to select a first antenna of the plurality of receiver antennas of the  
receiving device having a smallest average injection power to receive at least one complex  
value symbol from the plurality of transmitter antennas ~~The transceiver of claim 19, wherein said~~  
module performs all computations of the metric proportional to the average injection power  
according to:

$$AIP_i = \frac{1}{\sum_{j=0}^{M_T-1} |h_{i,j}|^2}$$

where  $AIP_i$  is the average injection power,

where  $i$  is an index of a selected receiver antenna,

where  $j$  is an index of a selected transmitter antenna to transmit the at least one  
complex symbol value,

where  $h_{x,y}$  is a measured complex channel coefficient of the propagation channel between receiver antenna  $x$  and transmitter antenna  $y$ ,  
and where  $M_T$  is a quantity of the plurality of transmitter antennas.

21. (Currently Amended) A transmitting device, comprising:  
a plurality of transmitter antennas, wherein the transmitting device can communicate using one or more propagation channels between the plurality of transmitter antennas and a plurality of receiver antennas of a receiving device; and  
a module operable to compute a metric proportional to an average injection power for each receiver antenna of the plurality of receiver antennas of the receiving device, the module further operable to select a first antenna of the plurality of receiver antennas of the receiving device having a smallest average injection power to receive at least one complex value symbol from the plurality of transmitter antennas ~~The transceiver of claim 10~~, wherein said module performs all computations of the metric proportional to the average injection power according to:

$$AIP_i = \sum_{k=0}^{N-1} \left( \frac{1}{\sum_{j=0}^{M_T-1} |H_{i,j}[k]|^2} \right)$$

where  $AIP_i$  is the average injection power,  
where  $i$  is an index of a selected receiver antenna to receive the at least one complex symbol value,  
where  $j$  is an index of a selected transmitter antenna to transmit the at least one complex symbol value,  
where  $k$  is an index of OFDM sub-channels connecting a  $j$ -th transmitter antenna to an  $i$ -th receiver antenna,  
where  $H_{i,j}[k]$  is a measured complex channel coefficient of the propagation channel between receiver antenna  $x$  and transmitter antenna  $y$ ,  
where  $N$  is the quantity of the OFDM sub-channels, and  
where  $M_T$  is the quantity of the plurality of transmitter antennas.

22. (Currently Amended) A ~~transceiver~~transmitting device, comprising:  
~~one or more~~ a plurality of transmitter antennas; ~~one or more receiver antennas;~~  
wherein the transmitting device can communicate using one or more propagation  
channels between said plurality of transmitter antennas and a plurality of one or more  
receiver antennas of a receiving device; and

a module operable to compute a vector norm for each receiver antenna of said  
plurality of receiver antennas of the receiving device, said module further operable to select a  
first antenna of said ~~one or more~~ plurality of receiver antennas having a largest vector norm to  
receive at least one complex value symbol from said ~~one or more~~ plurality of transmitter  
antennas.

23. (Currently Amended) The ~~transceiver~~transmitting device of claim 22, wherein  
said module performs all computations of the vector norm according to:

$$VN_i = \sum_{j=0}^{M_T-1} |h_{i,j}|^2 = \|\mathbf{h}_i\|_2^2$$

where  $VN_i$  is the vector normal of one of the plurality of receiver antennas,

where  $i$  is an index of a selected receiver antenna to receive the at least one complex  
symbol value,

where  $j$  is an index of a selected transmitter antenna to transmit the at least one complex  
symbol value,

where  $h_{x,y}$  is a measured complex channel coefficient of the propagation channel  
between receiver antenna  $x$  and transmitter antenna  $y$ , and

where  $M_T$  is the quantity of the plurality of transmitter antennas.

24. (Currently Amended) A transmitting device, comprising:  
a plurality of transmitter antennas;

a plurality of receiver antennas, wherein the transmitting device can communicate using one or more propagation channels between the plurality of transmitter antennas and a plurality of receiver antennas of a receiving device; and

a module operable to compute a vector norm for each receiver antenna of the plurality of receiver antennas of the receiving device, the module further operable to select a first antenna of the plurality of receiver antennas having a largest vector norm to receive at least one complex value symbol from the plurality of transmitter antennas The transceiver of claim 22, wherein said module performs all computations of the vector norm according to:

$$VN_i = \sum_{k=0}^{N-1} \left( \sum_{j=0}^{M_T-1} |H_{i,j}[k]|^2 \right) = \sum_{k=0}^{N-1} \|\mathbf{H}_i[k]\|_2^2$$

where  $VN_i$  is the vector norm of one of the plurality of receiving antennas,

where  $i$  is an index of a selected receiver antenna to receive the at least one complex symbol value,

where  $j$  is an index of a selected transmitter antenna to transmit the at least one complex symbol value,

where  $k$  is an index of OFDM sub-channels connecting a  $j$ -th transmitter antenna to an  $i$ -th receiver antenna,

where  $H_{x,y}[k]$  is a measured complex channel coefficient of the propagation channel between receiver antenna  $x$  and transmitter antenna  $y$ ,

where  $N$  is the quantity of the OFDM sub-channels, and

where  $M_T$  is the quantity of the plurality of transmitter antennas.